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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/664,241	09/18/2000	Andreas Hajek	Hoeger-422	4110

7590  
Edward J Timmer  
Walnut Woods Centre  
5955 W Main Street  
Kalamazoo, MI 49009

01/08/2002

EXAMINER

EGWIM, KELECHI CHIDI

ART UNIT	PAPER NUMBER
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1713

DATE MAILED: 01/08/2002

6

Please find below and/or attached an Office communication concerning this application or proceeding.

TD-6

# Office Action Summary

Application No.

09/664,241

Applicant(s)

HAJEK ET AL.

Examiner

Dr. Kelechi C. Egwim

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

## Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☒ Responsive to communication(s) filed on 19 September 2000.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 1-16 is/are pending in the application.
- 4a) Of the above claim(s) 14-16 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-13 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☒ Claim(s) 1-16 are subject to restriction and/or election requirement.

## Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.  
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

## Priority under 35 U.S.C. §§ 119 and 120

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a) ☒ All b) ☐ Some \* c) ☐ None of:  
1. ☒ Certified copies of the priority documents have been received.  
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.  
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).  
\* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).  
a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☒ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

## Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 5.
- 4) ☐ Interview Summary (PTO-413) Paper No(s) \_\_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_.

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## DETAILED ACTION

### *Election/Restrictions*

1. Restriction to one of the following inventions is required under 35 U.S.C. 121:
  - I. Claims 1-13, drawn to a moulding composition, classified in class 523, subclass 201.
  - II. Claims 14-16, drawn to sanitary articles prepared from the composition of group I, classified in class 4, subclass 650.

The inventions are distinct, each from the other because of the following reasons:

2. Inventions I and II are related as mutually exclusive species in an intermediate-final product relationship. Distinctness is proven for claims in this relationship if the intermediate product is useful to make other than the final product (MPEP § 806.04(b), 3rd paragraph), and the species are patentably distinct (MPEP § 806.04(h)). In the instant case, the intermediate product is deemed to be useful as a composition for preparing articles for non sanitary use such as transparent plates, glasses, automobile components and other molded or cast material and the inventions are deemed patentably distinct since there is nothing on this record to show them to be obvious variants. Should applicant traverse on the ground that the species are not patentably distinct, applicant should submit evidence or identify such evidence now of record showing the species to be obvious variants or clearly admit on the record that this is the case. In either instance, if the examiner finds one of the inventions anticipated by the

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prior art, the evidence or admission may be used in a rejection under 35 U.S.C. 103(a) of the other invention.

3. Because these inventions are distinct for the reasons given above and the search required for Group II is not required for Group I, restriction for examination purposes as indicated is proper.

4. Because these inventions are distinct for the reasons given above and have acquired a separate status in the art because of their recognized divergent subject matter, restriction for examination purposes as indicated is proper.

5. During a telephone conversation with Edward Timmer on 12/21/01, a provisional election was made with traverse to prosecute the invention of Group I, claims 1-13. Applicant in replying to this Office action must make affirmation of this election. Claims 14-16 are withdrawn from further consideration by the examiner, 37 CFR 1.142(b), as being drawn to a non-elected invention.

6. Applicant is reminded that upon the cancellation of claims to a non-elected invention, the inventorship must be amended in compliance with 37 CFR 1.48(b) if one or more of the currently named inventors is no longer an inventor of at least one claim remaining in the application. Any amendment of inventorship must be accompanied by a request under 37 CFR 1.48(b) and by the fee required under 37 CFR 1.17(i).

***Specification***

7. The title of the invention is not descriptive. A new title is required that is clearly indicative of the invention to which the claims are directed.

The following title is suggested: FILLED METHACRYLATE SYRUP  
COMPOSITION WITH ELASTOMER PARTICLES.

***Claim Rejections - 35 USC § 112***

8. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

9. Claim 11 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

10. Claim 11 recites the limitations "the core" and "the shell" in claim 1. There is insufficient antecedent basis for this limitation in the claim. There is no recitation of a core or shell in claim 1.

***Claim Rejections - 35 USC § 102***

11. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

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(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

12. Claims 1-4 and 13 are rejected under 35 U.S.C. 102(b) as being anticipated by Krieg et al. (EP 639539).

In col. 1, lines 13-18, col. 2, lines 28- 58, col. 3, lines 10-36, col. 4, lines 18-22, col. 5, lines 34-42, and col. 6, line 16, Krieg et al. teach filled molding compositions comprising a poly(methyl methacrylate) syrup containing 30 to 80 percent of inorganic filler (FS), 1 to 15 percent by weight, based on the syrup, of PMMA having a molecular weight from about 10,000 to 400,000 (PM), 1 to 20 percent of a solid particulate polymer (PP) with has particles ranging a size from 0.13 to 0.15 mm (30 microns to about 150 microns), being optionally at least partially crosslinked, said solid particulate polymer (PP) being defined in documents such as DE 2135828 to Fink et al.

In the abstract of DE 2135828, Fink et al. teaches the solid particulate polymer to be elastomers, with glass transition temperatures below 35 °C.

Thus, the requirements for rejection under 35 U.S.C. 102(b) are met.

### ***Claim Rejections - 35 USC § 103***

13. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

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14. Claims 5-7, 9, 10 and 12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Krieg et al. in combination with Hwa et al. (USPN 3,661,994).

Krieg et al., above, differs from the claimed invention in that the solid elastomer particulate are not defined as having a core/shell structure with an elastomer core and matrix compatible shell. However, it is known in the art to incorporate such core/shell elastomers into rigid plastic such as methacrylate, for the purpose of imparting improved impact strength onto the products through the elastomer, whilst maintaining good adhesion between the rubber (elastomer) particles and the continuous matrix phase through the matrix compatible outer shell, such as taught by Hwa et al. (See col. 1, lines 28-30 and 65-72).

In col. 1, lines 24-30 and 64-72, col. 3, lines 15-22 and col. 4, lines 1-7, Hwa et al. teach that the rubber/elastomer particles used to reinforce rigid plastics such as poly(methyl methacrylate) can be improved by grafting the rubber particles with an outer layer compatible with the rigid polymer matrix. Hwa et al. teach such elastomer particles comprising up to four layers, wherein at least one core layer comprises an elastomer layer and the outer layer is a matrix compatible layer from a monomer such as methyl methacrylate.

In col. 4, lines 8-19, Hwa et al. expresses the rubber content of the particles in terms of the rubber replaced (see figure 4), being preferable from 0.5 to 30% (about 15 to 60% of particle thickness is core/elastomer).

Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made, to use core/shell particles as taught in Hwa et al., as

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the particles (PP) in the poly(methyl methacrylate) composition of Krieg et al. in order to obtain the improvements taught by Hwa et al., motivated by a reasonable expectation of success.

15. Claims 5-10 and 12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Krieg et al. in combination with Hofmann (USPN 4,180,529) or Henton et al. (WO 88/05450)

Krieg et al., above, differs from the claimed invention in that the solid elastomer particulate are not defined as having a core/shell structure with an elastomer core and matrix compatible shell. However, it is known in the art to incorporate such core/shell elastomers into rigid plastics such as poly(methyl methacrylate), for the purpose of imparting improved impact strength onto the products, whilst maintaining good adhesion between the elastomer particles and the continuous matrix phase and/or whilst reducing the stress whitening of the products and maintain good weatherability, such as taught by Hofmann (See col. 1, lines 19-25 and 42-52) or Henton et al. (See page 3, lines 4-26).

In col. 1, line 55 to col. 2, line 4, col. 2, lines 31-46, col. 3, lines 50-68 and col. 4, lines 5-7, Hofmann teaches elastomer (resilient) particles used to reinforce rigid plastics such as poly(methyl methacrylate), wherein the elastomer particles comprising up to four layers, wherein at least one core layer comprises an elastomer layer and the outer layer is a matrix compatible layer from a monomer such as methyl methacrylate.



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Hofmann teaches the outer layer of the particles to optionally be crosslinked and the core stages to comprise about 60 to 95 % of the elastomer particles.

In page 1 ¶ 1, page 3 ¶ 2, page 5 ¶ 2, page 6 ¶ 3 and page 7 ¶ 3, Henton et al. teach elastomer/rubber particles used to reinforce rigid plastics such as poly(methyl methacrylate), wherein the elastomer particles comprising at least one core elastomer layer and at least one the outer layer is a matrix compatible layer from a monomer such as methyl methacrylate. Henton et al. teach the outer layer to be at least partially crosslinked and the core stages to comprise from about 1 to 99 % of the elastomer particles.

Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made, to use the core/shell particles as taught in Hofmann or Henton et al. as the particles (PP) in the poly(methyl methacrylate) composition of Krieg et al. in order to obtain the advantages taught by Hofmann or Henton et al., motivated by a reasonable expectation of success.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Dr. Kelechi C. Egwim whose telephone number is (703) 306-5701. The examiner can normally be reached on M-T (7:30-6:00).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David Wu can be reached on (703) 308-2450. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 872-9310 for regular communications and (703) 872-9311 for After Final communications.

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Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703)308-0661.

A handwritten signature in black ink, appearing to be 'KCE', with a long, sweeping horizontal line extending to the right.

KCE

January 4, 2002